CHAPTER 5

Thoroughfare and Collector Street Planning

Introduction

The planning process for the Greensboro Urban Area Long Range Transportation Plan (LRTP) included a review and update to the urban area's existing Thoroughfare Plan and the development of a *draft* Collector Street Plan. The Thoroughfare Plan has been carefully prepared to provide safe, efficient and convenient movement of vehicles into, out of, and thorough the urban area. The Thoroughfare Plan also represents an unconstrained set of future thoroughfare needs. The first Thoroughfare Plan for the urban area was adopted in 1954 and numerous adopted versions followed. The current Thoroughfare Plan was adopted July 1996 and has been amended five times since, in response to needs in the urban area.

Unlike the Thoroughfare Plan, the Collector Street Plan is a new element of the LRTP. The City of Greensboro has established and maintained a database of existing collector streets within the City limits. The MPO has recently acknowledged, however, the need to plan a series of interconnected collector streets throughout the entire urban area. The MPO worked cooperatively with the LRTP Technical Committee, to develop a *Draft* Collector Street Plan. The results of these planning efforts are described in the following section.

Thoroughfare Plan

The Thoroughfare Plan represents existing and proposed major and minor thoroughfare roadways. It also indicates existing and proposed grade separations, and interchanges. It is primarily a planning tool that corresponds with local development ordinance requirements for right-of-way dedication and roadway construction. Setback requirements within these ordinances also ensure that future widening can be achieved without significant impacts to properties, thereby reducing total construction cost. Unlike the LRTP, the plan does not specify the timing of proposed roadway projects nor is it fiscally constrained.

The Technical Committee undertook the task of revising the current Thoroughfare Plan. The Committee's examination of the current plan revealed a number of projects that needed to be modified, added, or deleted. As a result of the Committee's detailed analysis, the Thoroughfare Plan has been made fully consistent with existing and proposed projects from the LRTP and

"...145 changes were made to the existing Thoroughfare Plan." includes many other noteworthy additions such as future grade separations, new, existing and proposed major and minor thoroughfares, and proposed interchange locations. In total, there are 145 proposed changes to the existing Thoroughfare Plan, which are listed in **Tables 5.1** and **5.2**. **Map 5.1** depicts the Proposed Thoroughfare Plan. Following the completion of the LRTP, the MPO will review the current thoroughfare design standards for possible revisions in local development ordinances.

In the near future, the Thoroughfare Plan will evolve into a more detailed set of plans that extend beyond the roadway system. Currently, NCDOT is developing specifications for a Statemandated Comprehensive Transportation Plan (CTP). The CTP will replace the thoroughfare plan, which was previously required under North Carolina General Statutes (NCGS). The CTP will consist of a series of map components, accompanied by text documentation. Several of the CTP components have been identified: Highways, Bicycle and Pedestrian Facilities, Public Transportation, and Passenger Rail.

The CTP highway component will classify facilities previously shown on the thoroughfare plan, according to a classification system based on the current and planned access control category of each facility. Traffic analysis data and stakeholder involvement findings will support the classification process. The access control classifications will also be cross-classified with the former thoroughfare plan classifications to clearly indicate how they relate at the corridor level. The CTP will complement the thoroughfare plan and Collector Plan and will be used to fulfill the state mandate of NCGS 136-66.2 for a Highway Needs Plan.

 $\begin{tabular}{ll} \textbf{Table 5.1} - \textbf{Changes to Roadway Elements in the} \\ \textbf{Proposed Thorough fare Plan} \\ \end{tabular}$

ID No.	ROADWAY	FROM	то	PREVIOUS CLASSIFICATION	PROPOSED CLASSIFICATION
1	US 158	NC 65	US 158	Local	Existing Minor
2	Goodwill Ch Rd	Haw River Rd	MAB	Local	Existing Minor
4	Beeson Rd	Bunker Hill Rd	NC 150	Local	Existing Minor
5	Bunker Hill Rd	Beeson Rd	Stafford Mill Rd	Minor	Remove Minor
6	Eversfield Rd	US 158 Bypass	Brookbank Rd	Local	Existing Minor
7	Bunch Rd	Brookbank Rd	Pleasant Ridge Rd	Local	Existing Minor
8	Pleasant Ridge Rd	Future NC 150	Summerfield Rd	Local	Existing Major
9	Lake Brandt Rd	NC 150	MAB	Minor	Existing Major
10	Plowfield Rd	Lake Brandt Rd	New Alignment	Local	Existing Minor
11	Plowfield Rd	Plowfield Rd	Church St	Local	Proposed Minor
12	Archergate Rd	Church St	Yanceyville St	Local	Existing Minor
13	Church St	Wendover Ave	MAB	Minor	Existing Major
14	Doggett Rd	Yanceyville St	NC 150	Local	Existing Minor
15	Fairgrove Ch Rd	NC 150	MAB	Local	Remove Minor
16	Brooks Lake Rd	NC 150	MAB	Local	Existing Minor
17	Benaja Rd	Old Reidsville Rd	MAB	Local	Existing Minor
18	Old Reidsville Rd	NC 150	Benaja Rd	Local	Existing Minor
20	Friendship Ch Rd	Hicone Rd	MAB	Local	Existing Minor
21	Osceola-Ossipee Rd	NC 61	MAB	Minor	Existing Major
22	High Rock Rd	Frieden Ch Rd	MAB	Local	Existing Major
23	Sheppard Rd	NC 61	MAB	Local	Existing Minor
24	High Rock Rd	Frieden Ch Rd	Bethel Ch Rd	Roadway Not Present	Proposed Major
25	High Rock Rd	Frieden Ch Rd	Bethel Ch Rd	Local	Existing Major
26	High Rock Rd	Frieden Ch Rd	Bethel Ch Rd	Roadway Not Present	Proposed Major
27	High Rock Rd	Frieden Ch Rd	Bethel Ch Rd	Local	Existing Major
28	High Rock Rd	Frieden Ch Rd	Bethel Ch Rd	Roadway Not Present	Proposed Major
29	Carmon Rd Ext	Carmon Rd	McLeansville Rd	Roadway Not Present	Proposed Minor
30	Bethel Ch Rd	Carmon Rd	Knox Rd	Minor	Existing Minor
31	Knox Rd	Bethel Ch Rd	Frieden Ch Rd	Local	Existing Minor
32	Knox Rd	Bethel Ch Rd	Frieden Ch Rd	Roadway Not Present	Proposed Minor
33	Carmon Rd	Frieden Ch Rd	Railroad	Minor	Remove Minor
34	Flemingfield Rd	US 70	Reedy Fork Pkwy	Local	Existing Minor
35	Flemingfield Rd	US 70	Reedy Fork Pkwy	Roadway Not Present	Proposed Minor
36	Flemingfield Rd	US 70	Reedy Fork Pkwy	Local	Existing Minor
37	Flemingfield Rd	US 70	Reedy Fork Pkwy	Roadway Not Present	Proposed Minor

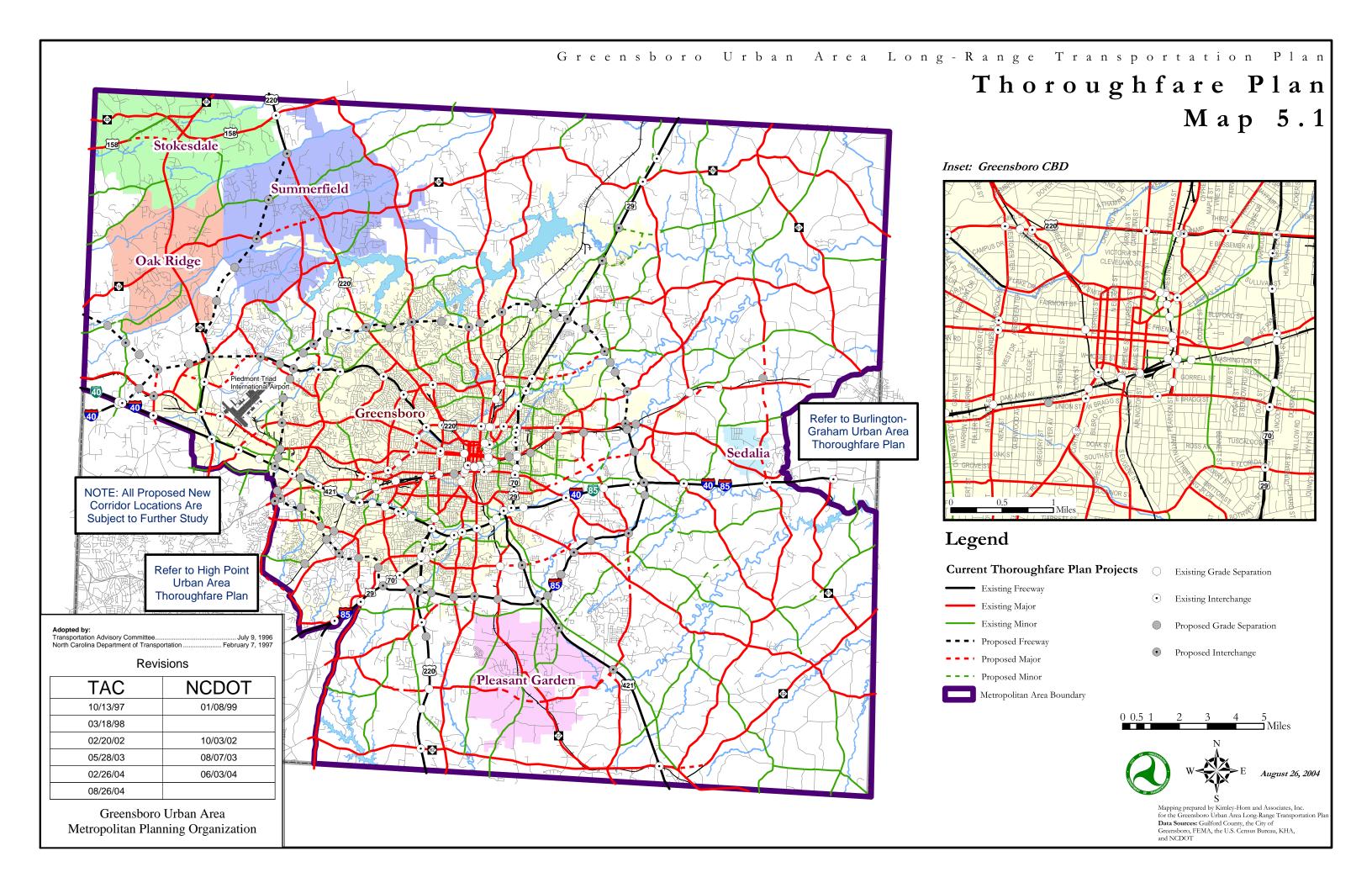
ID	ROADWAY	FROM	то	PREVIOUS	PROPOSED
No.				CLASSIFICATION	CLASSIFICATION
	Flemingfield Rd	US 70	Reedy Fork Pkwy	Local	Existing Minor
	Nealtown Rd	Cone Blvd	McKnight Mil Rd	Roadway Not Present	Proposed Minor
	Ward Rd	Holts Chapel Rd	Youngs Mill Rd	Major	Remove Major
_	JFH Dairy Rd	Holts Chapel Rd	Ward Rd	Major	Remove Major
	Holts Chapel Rd	Youngs Mill Rd	Mt Hope Ch Rd	Proposed Minor	Remove Minor
	Florida St Ext	McConnell Rd	Clapp Farm Rd	•	Proposed Major
44	Youngs Mil Rd Ext	McConnell Rd	Ward Rd	Roadway Not Present	Proposed Major
45	Youngs Mill Rd	Lee St	McConnell Rd	Minor	Existing Major
46	Sharpe Rd	Alamance Ch Rd	Youngs Mill Rd	Local	Existing Minor
47	Causey Lake Rd	Causey Lake Rd	Alamance Ch Rd	Proposed Major	Existing Major
48	Williams Dairy Rd	Camrose Rd	Millpoint Rd	Proposed Minor	Remove Minor
49	Mill Point Rd	Thacker Dairy Rd	Millpoint Rd	Local	Existing Minor
50	Williams Dairy Rd	Camrose Rd	Millpoint Rd	Roadway Not Present	Proposed Minor
51	Wade Store Rd	Alamance Ch Rd	Mt Hope Ch Rd	Local	Existing Minor
52	Rock Creek Rd	Mt Hope Ch Rd	Thacker Dairy Rd	Major	Remove Major
53	Holts Store Rd	Mt Hope Ch Rd	Thacker Dairy Rd	Minor	Existing Major
54	Mt Hope Ch Rd	Rock Creek Dairy Rd	Holts Store Rd	Minor	Existing Major
55	Holts Store Rd	Mt Hope Ch Rd	Connector	Minor	Existing Major
56	Mt Hope Ch Rd	Rock Creek Dairy Rd	McPherson Rd	Local	Existing Major
57	Holts Store Connector	Holts Store Rd	NC 61	Proposed Minor	Proposed Major
58	Shoe Rd	NC 61	MAB	Minor	Existing Major
59	Wheeler Bridge Rd	MAB	Shoe Rd	Roadway Not Present	Existing Minor
60	Kimesville Rd	Alamance Ch Rd	MAB	Roadway Not Present	Existing Minor
61	Smithwood Rd	Coble Ch Rd	Timber River Rd	Roadway Not Present	Existing Minor
62	NC 62 Connector	NC 62	Old Julian Rd	Proposed Major	Remove Major
63	NC 62	NC 62	NC 62	Local	Existing Major
64	Monett Rd	US 421	Company Mill Rd	Local	Existing Minor
65	Liberty Rd	US 421	NC 62	Local	Existing Minor
66	Steeple Chase Rd	Steeple Chase Rd	Hagan Stone Park	Proposed Major	Remove Major
67	Hagan Stone Park Rd	Pleasant Garden Rd	New Alignment	Local	Proposed Major
68	Spur Rd	Alliance Ch Rd	Neelley Rd	Proposed Minor	Remove Minor
69	Vandalia Rd	Vandalia Rd	Vandalia Rd	Proposed Major	Remove Major
70	Vandalia Rd	Vandalia Rd	US 421	Roadway Not Present	Proposed Major
71	Wall Rd	Groometown Rd	Drake Rd	Local	Existing Minor
72	Drake Rd	Kivett Dr	NC 62	Local	Existing Minor
73	Bishop Rd	Groometown Rd	Old Randleman Rd	Local	Existing Minor
74	Bishop-Spur Connector	Bishop Rd	Spur Rd	Proposed Minor	Remove Minor
75	Holden Rd	Holden Rd	Old Randleman Rd	Major	Remove Major
76	Holden Rd	Holden Rd	Old Randleman Rd	Roadway Not Present	Proposed Major

ID No	ROADWAY	FROM	то	PREVIOUS	PROPOSED
No.	Old D Il D 1	147-1C-1	D II D I	CLASSIFICATION	CLASSIFICATION
77	Old Randleman Rd	Wolfetrail Rd	Randleman Rd Randleman Rd	Major	Remove Major
	Ritters Lake Rd	Rehobeth Ch Rd	_	Proposed Minor	Remove Minor
	Wolfetrail Rd	Old Randleman Rd	Randleman Rd	Local	Existing Major
	Wolfetrail Rd	Randleman Rd	Elm-Eugene St	Roadway Not Present	Proposed Minor
	Vandalia Rd	Wiley Davis Rd	Groometown Rd	Major	Remove Major
	MLK Jr Dr	Elm-Davie	Florida St	Major	Remove Major
	Spring Garden St	Greene St	Aycock St	Major	Existing Minor
	Lovett St	Lee St	Freeman Mill Rd	Major	Remove Major
	Chapman St	Friendly Ave	Lee ST	Minor	Remove Minor
	Greene St	Lindsay St	Fisher Ave	Local	Existing Major
	Lindsay St	Elm St	Greene St	Major	Existing Minor
	Bessemer Ave	Church St	Burlington Rd	Local	Existing Minor
	Benjamin Pkwy	Bryan Blvd	Aycock St	Freeway	Existing Major
	Cornwallis Dr	Battleground Ave	Holden Rd	Minor	Remove Minor
91	Pisgah Ch	Battleground Ave	Church St	Minor	Existing Major
	Lees Chapel Rd	Church St	Hicone Rd	Minor	Existing Major
93	Hicone Rd	Lees Chapel Rd	US 29	Minor	Proposed Major
94	Church St	Lindsay St	Washington St	Local	Existing Minor
95	Lake Jeanette Rd	Lawndale Dr	Elm St	Local	Existing Minor
96	Bass Chapel	Netfield Rd	Air Harbor Rd	Local	Proposed Minor
97	Netfield Rd	Bass Chapel Rd	Air Harbor Rd	Minor	Remove Minor
98	Westridge Rd	Friendly Ave	Battleground Ave	Major	Existing Minor
99	New Garden Rd	Fleming Rd	Battleground Ave	Minor	Existing Major
100	High Point Rd	Roland Rd	Mackay Rd	Roadway Not Present	Proposed Major
101	Stanley Rd	Wendover Ave	Hilltop Rd	Local	Existing Minor
102	Omitted	n/a	n/a	n/a	n/a
103	Chimney Rock Rd	Hornaday Rd	Old Oak Ridge Rd	Minor	Remove Minor
104	Burnt Poplar Rd	Swing Rd	Regional Rd	Local	Existing Minor
105	Gallimore Dairy Rd	MAB	Market St	Minor	Existing Major
106	MLK Jr Dr	Patton Ave	I-40	Freeway	Existing Major
107	Norwalk Dr	Wendover Ave	Market St	Local	Existing Minor
127	McKnight Mill Rd Ext	Hicone Rd	Eckerson Rd	Roadway Not Present	Proposed Minor
128	Washington St	Spring St	Church St	Local	Existing Minor
130	Spring Garden St	Market St	Aycock St	Major	Existing Minor
131	Rankin Mill Rd	Hicone Rd	Proposed	Local	Existing Minor
	Florida St Ext	Clapp Farm Rd	Mt Hope Ch Rd	Local	Existing Major
	Florida St Ext	Clapp Farm Rd	Mt Hope Ch Rd	Proposed Minor	Remove Minor
	Steeple Chase Rd	Steeple Chase Rd		Roadway Not Present	Existing Major
	Mt Hope Ch Rd	McPherson St	Alamance Ch Rd	Roadway Not Present	Proposed Major

ID No.	ROADWAY	FROM	то	PREVIOUS CLASSIFICATION	PROPOSED CLASSIFICATION
136	Wade Store Rd	Alamance Ch Rd	Mt Hope Ch Rd	Roadway Not Present	Proposed Minor
137	Wade Store Rd	Alamance Ch Rd	Mt Hope Ch Rd	Local	Existing Minor
138	Eversfield Rd	US 158 Bypass	Brookbank Rd	Roadway Not Present	Proposed Minor
139	Hicone Rd	US 29	End	Local	Existing Major
140	Vandalia Rd	Vandalia Rd	US 421	Local	Existing Major
140	Lindsay St	Greene St	Eugene St	Local	Existing Minor
141	Birch Creek Rd	McLeansville Rd	Knox Rd	Local	Existing Minor
142	Bethel Ch Rd	Knox Rd	Bethel Ch Rd	Roadway Not Present	Proposed Minor

Table 5.2 — Changes to Grade Separation and Interchange Elements in the Proposed Thoroughfare Plan

Thoroughtare Plan					
ID No.	Street Name	Street Classification	Crossing	Crossing Type	
3	Rudd Station Rd	Proposed Local	Railroad	Proposed Grade Separation	
19	NC 150	Existing Major	Railroad	Proposed Grade Separation	
108	Wagner Bend Rd	Existing Collector	Railroad	Proposed Grade Separation	
109	Ward Rd	Proposed Major	Railroad	Proposed Grade Separation	
110	Franklin Blvd	Existing Minor	Railroad	Proposed Grade Separation	
111	English St	Minor Existing	Railroad	Proposed Grade Separation	
112	Gillespie St	Existing Collector	Railroad	Proposed Grade Separation	
113	Dudley St	Existing Minor	Railroad	Proposed Grade Separation	
114	Gallimore-Friendly	Proposed Major	Railroad	Proposed Grade Separation	
115	McLeansville Rd	Existing Major	Railroad	Proposed Grade Separation	
115	Hilltop Rd	Existing Major	Railroad	Proposed Grade Separation	
116	Knox Rd	Proposed Minor	Railroad	Proposed Grade Separation	
116	Mackay Rd	Existing Minor	Railroad	Proposed Grade Separation	
117	High Rock-Rock Creek Connector	Proposed Major	Railroad	Proposed Grade Separation	
118	Regional Rd	Existing Major	Bryan Blvd	Proposed Interchange	
119	Hillcroft Rd	Existing Major	Railroad	Proposed Grade Separation	
120	Yanceyville St	Existing Major	Railroad	Proposed Grade Separation	
121	Monnett Rd	Minor Existing	US 421	Proposed Grade Separation	
122	Reedy Fork Parkway	Minor Proposed	US 29	Proposed Interchange	
125	Bishop Rd Extension	Minor Proposed	Bishop Rd Ext	Proposed Grade Separation	
134	Bunker Hill	Minor Existing	Railroad	Proposed Grade Separation	
143	High Point Rd	Freeway Proposed	Urban Loop	Proposed Interchange	
144	US 29	Freeway Existing	Reedy Fork Pkwy	Proposed Interchange	
145	Chimney Rock	Existing Collector	Railroad	Proposed Grade Separation	



Collector Street Plan

The collector street planning process includes two components: the classification of existing streets as collectors; and the identification of new collector street connections. These two work tasks are complimentary, and both are key parts of the land use and transportation planning toolbox for creating more livable, functional communities.

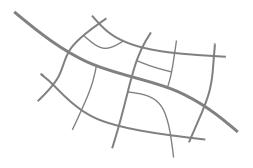
Often collector streets are constructed over time in an uncoordinated fashion. This practice typically results in a fragmented system of streets. The development of a collector street plan allows for the orderly and incremental implementation of the collector street network. **Figure 5.1** illustrates the contrast between an interconnected network with an effective system of collector streets and a fragmented network, in which local streets access arterials directly. The resulting plan accounts for the desired level of mobility by ensuring connectivity at appropriate locations. As a result, the two greatest advantages of having a collector street plan include: 1) it assists local planning for public transportation, pedestrian and bicycle facilities, improved traffic circulation and traffic control; and 2) when linked to the Unified Development Ordinance it enables appropriate transportation facility design and improvement requirements to be fulfilled through the process of development and redevelopment.

Why Plan Collector Streets?

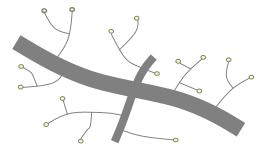
Collector streets provide critical connections throughout the overall transportation system. A brief description of the roadway network highlights the importance of this role. At the national level, interstates and major US routes provide high levels of mobility, with fully controlled access. Within North Carolina, state highways and major thoroughfares provide slightly lower mobility, which is offset by a greater, but still limited, degree of access. At the neighborhood level, local streets with narrower cross-sections and sharper turning radii, provide very limited mobility, but the highest levels of direct access to destinations.

Collector streets bridge the gap between the freeway and thoroughfare system and the local street network by providing a more even balance of mobility and access. The versatile collector street network connects the high mobility and traffic carrying capacity of interstates and thoroughfares with the accessibility of local streets. Until recently, traditional emphasis on thoroughfare

Figure 5.1—Connectivity and Collector Streets



Connected Street Network



Fragmented Street Network

planning has overshadowed the importance and benefits of a well integrated network of collector streets.

While there are potential challenges related to the implementation of a collector street plan, the benefits are numerous as identified below.

Benefits:

- More reliable and timely emergency response—a greater number of direct routes
- Better public services/utilities—interconnected service networks (that generally follow the street) contribute to even and reliable distribution
- More efficient refuse collection—less back-tracking
- Potential for congestion reduction—short trips can be made without using thoroughfares, protecting their capacity for longer trips
- Improved access—locate driveways on collectors, rather than thoroughfares
- Improved local mobility—collectors are frequently ideal corridors for pedestrians, bicyclists, and transit services
- Cost—can be shared between public and private entities, may reduce the need for costly roadway improvements
- Consistent and appropriate design—when linked to the Unified Development Ordinance design and improvement requirements can be enforced

Challenges:

- Impacted water quality—more stream crossings and potential wetland impacts
- Affected wildlife—streets can be barriers and change plant and animal spread/movement and migratory patterns
- Perception—connections may not always be viewed as needed or beneficial by those concerned
- Cost—who pays and how much is contributed by each?

Identifying the Existing Collector Street System

The process used by the Technical Committee in designating existing streets as collectors included a review of existing designations within the City of Greensboro, a review of land uses, a review of the degree of connectivity provided between the local and major street system, and an assessment of future development needs along existing streets. The process involved a draft prepared by the project team, review and revision by GDOT staff, and a close examination by the Technical Committee.

Identifying Future Collector Street Connections

The following guidelines were used in identifying the future collector street connections contained in the draft Collector Street Plan:

- Avoid steep slopes and otherwise unsuitable topography
- Minimize impact to the built environment
- Avoid FEMA designated floodplains
- Minimize the number of wetland (National Wetland Inventory) impacts
- Minimize the amount of each wetland impact (i.e., don't cross a wide wetland when a narrower one can be crossed)
- Minimize the frequency of stream crossings
- Minimize the number of high-quality (larger) stream crossings
- Minimize the length of stream crossings
- Minimize school impacts
- Minimize the number and size of each impact to other environmental features such as historic features and districts, threatened and endangered species, hazardous waste sites, and superfund sites
- Avoid impacts to parks and designated open spaces
- Minimize the number of new facilities in critical watershed
- Coordinate with existing and planned development patterns
- Evaluate extensions of, or connections to existing stub streets
- Develop feasible connections (A to B) between destinations
- Consider Land Use Plan goals for area development
- Consider land use potential and plan future collector connections according to established spacing guidelines (see Figure 5.2)

Other considerations included: previously known connection needs, collector street considerations for areas with significant near term development pressure, and coordination with the goals of area land use plans. These principles will be used in developing the set of future collector street connection needs throughout the MPO area that will be included in the final Collector Street Plan, which will serve as a supplement to the Thoroughfare Plan.

Draft Collector Street Plan

The result of this planning exercise was the development of a draft Collector Street Plan (see Map 5.2). The collector street planning process has identified a substantial number of new (future) and existing collector streets. The following statistics present the total mileage of the draft collector street system (existing and proposed streets):

Figure 5.2—Collector **Street Spacing Guidelines**



Low Intensity L/U Street Spacing 3,000' to 6,000'



Medium Intensity L/U Street Spacing 1.500' to 3.000'



High Intensity L/U Street Spacing 750' to 1,500'

- Total collector street mileage (existing and proposed streets)— 901 miles
- Existing collector street mileage (existing streets classified as collectors)—702 miles
- Future collector street mileage (proposed connections)—199 miles

The draft Collector Street Plan presented here is the first step in a process that will continue after the completion and adoption of the LRTP. The MPO will refine the Collector Street Plan through further coordination with local governments, additional opportunities for public review, the development of collector street design standards, and implementation measures. Finally, in an effort to promote the plan's implementation, the MPO will seek adoption by local governments.

Draft Goals and Implementation Policies

As work continues on the collector street plan, the following general goals and implementation measures will be considered:

Outcome goals:

- Increase the number of collector streets to better facilitate travel between local streets and arterials through implementation of the Collector Street Plan
- Improve accessibility to higher intensity residential areas and activity centers
- Avoid and/or minimize impacts to environmentally sensitive areas to preserve the natural environment
- As the transportation system is improved and expanded, minimize impacts that negatively affect the character and integrity of neighborhoods

Implementation Policies:

- Consider the Collector Street Plan as a supplement to Long Range Transportation Plan
- Seek to incorporate the Collector Street Plan and associated roadway design standards and policy requirements within Unified Development Ordinances (UDO) of the County and the municipalities
- Use the plan as a tool to communicate desired roadway connectivity as development projects are proposed
- Review all development proposals for consistency with the approved collector street plan and place an emphasis on connections between destinations, rather than on specific alignments

- Require that new developments reserve right-of-way for, and construct, future collector streets
- Integrate future bikeway, greenway, and trail networks with the *Collector Street Plan* to improve access and enhance connectivity between systems
- Amend the *Collector Street Plan* as necessary to include new streets as they are identified during the development review process